Linear equations: transpose and verify

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Name: _____ Class: _____ Date: _____

Worked example 1

Solve 5x − 7 = 2x + 8. Explain the operation behind each transposition.

$$5x - 7 = 2x + 8$$

Guided attempt 2

Solve 4x + 9 = 7x − 6 by collecting the variable terms on the left. Complete each line.

$$4x + 9 = 7x - 6$$

1. Subtract 7x on both sides: _____ x + 9 = −6.
2. Subtract 9 on both sides: _____ x = _____.
3. Divide both sides by _____: x = _____.
4. Original left side = _____; original right side = _____.

Prerequisite 3

For x + 7 = 2, which operation removes +7 while keeping both sides equal? Use it to find x.

$$x + 7 = 2$$

Prerequisite 4

Solve −3x = 12 and check the sign of your solution.

$$-3x = 12$$

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Independent practice 5

Solve 6x − 5 = 3x + 10.

$$6x - 5 = 3x + 10$$

Independent practice 6

Solve 2x + 11 = 5x − 7.

$$2x + 11 = 5x - 7$$

Independent practice 7

Solve −4x + 3 = x − 12.

$$-4x + 3 = x - 12$$

Independent practice 8

Solve 7 − 2x = 3x + 22.

$$7 - 2x = 3x + 22$$

Exit question 9

Solve 8x + 1 = 5x − 14 and verify in the original equation.

$$8x + 1 = 5x - 14$$

Exit question 10

A learner claims x = 7 solves 3x − 4 = x + 10. Verify by calculating both original sides. Is the claim correct?

$$3x - 4 = x + 10$$